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will be conducted at stations distributed practically along the entire belt of totality and also at outside stations, nearly every civilized nation participating.

These observations will afford a splendid opportunity for further testing the result already obtained. All those who are able to cooperate are invited to participate in this important work.

The scheme of work proposed embraces the following:

1. Simultaneous magnetic observations of any or all of the elements according to instruments at the observer's disposal, every minute from August 29, 22 h., to August 30, 4 h., Greenwich mean, astronomical time.

[To insure the highest degree of accuracy attainable, the observer should begin work early enough to have everything in complete readiness in proper time. See precautions taken in previous eclipse work as explained in *Terrestrial Magnetism*, Vol. V., page 146, and Vol. VII., page 16. *It is essential, as shown by past experience, that the same observer make the readings throughout the entire interval.*]

2. At magnetic observatories, all necessary precautions should be taken so that the self-recording instruments will be in good operation not only during the proposed interval, but also for some time before and after, and eye readings should be taken in addition wherever it be convenient.

[*It is recommended that, in general, the magnetograph be run on the usual speed throughout the interval, and that, if a change in the recording speed be made, every precaution possible be taken to guard against instrumental changes likely to affect the continuity of the base line.*]

3. Atmospheric electricity observations should be made to the extent possible by the observer's equipment and personnel at his disposal.

4. Meteorological observations in accordance with the observer's equipment should be made at convenient periods (as short as possible) throughout the interval. It is suggested that, at least, temperatures be read every fifth minute (directly after the magnetic reading for that minute).

5. Observers in the belt of totality are requested to take the magnetic reading every fifteen seconds during the time of totality and to read temperatures as frequently as possible.

6. At those stations where the normal diurnal variation can not be obtained from self-recording instruments, it is desirable to make the necessary observations for this purpose on as many days as possible before and after the day of the eclipse, and to extend, if possible, the above interval of observation. In general, those who will have self-recording instruments have decided to run them for at least eight days before and after the day of the eclipse.

It is hoped that observers will send full reports of their work to me as soon as possible for incorporation in the complete monograph on this subject to be published by the Carnegie Institution of Washington.

L. A. BAUER.

DEPT. TERRESTRIAL MAGNETISM,

CARNEGIE INSTITUTION,

WASHINGTON, D. C.

July 15, 1905.

NOMENCLATURE AT THE VIENNA INTERNATIONAL BOTANICAL CONGRESS.

AN international botanical congress was held at Vienna, Austria, June 11-18, 1905, under the presidency of Professor Julius Wiesner, of the University of Vienna, and a number of vice-presidents selected from the delegates from various countries. Between five hundred and six hundred persons were in attendance. After addresses of welcome by scientific and governmental Austrian officials, the congress divided into two sections, holding sessions, (1) for the general business of the congress and the reading of scientific papers, and (2) for the discussion of the special subject of botanical nomenclature, which had been arranged in advance on the basis of a vote by members of an international commission, appointed at the botanical congress held at Paris in 1900. The procedure had been capitally organized by Professor John Briquet, director of the botanical garden of Geneva, and reporter general of the

international commission; he had compiled, translated into French, and arranged for comparison all the numerous propositions relative to plant nomenclature published since the congress held in Paris in 1867, including the laws of nomenclature adopted by that body, and the general features of the code of botanical nomenclature adopted at the International Zoological Congress held at Berlin in August, 1901; this great work entailed the study of over forty printed documents, many of them of considerable length. Dr. Briquet's compilation was published under the auspices of a bureau established by the Paris congress of 1900 and by the local committee of the Vienna congress of 1905, under the title 'Texte Synoptique des Documents destinés à servir de base aux débats du Congrès International de Nomenclature Botanique de Vienne 1905,' a quarto book of 160 pages. This was distributed to the members of the international commission for their preliminary yes or no votes on the numerous and widely differing propositions, late in December, 1904, with the requirement that the votes must be received by the reporter general at Geneva not later than January 20, 1905; this requirement allowed very little time for members of the commission distant from Europe to consider the relative value of the propositions as presented by Dr. Briquet, a copy reaching New York only on January 18; thus no votes were included of members of the commission resident in South America, Asia or Australasia, and from only two of the four members each from Russia and the United States. For this reason, and for others, only 31 members voted out of the 47 appointed at Paris in 1900, and of these, 15 were German, Austrian, Belgian or Swiss.

Using the vote thus obtained as a basis, Dr. Briquet formulated a series of rules and recommendations for debate at Vienna, omitting in this, however, any cases in which he could not fairly figure out a majority of the 31 commissioners voting. The rules and recommendations thus obtained, were printed in a column reserved for them in the pages of the 'Texte Synoptique,' which had mean-

while been held in type, together with remarks and observations of the reporter general in another column similarly reserved; the document, thus increased, was again transmitted to the members of the international congress, as well as to all delegates from institutions and societies accredited to take part in the nomenclature debate at Vienna of 1905 under the conditions prescribed at the Paris congress of 1900, and these rules and recommendations thus submitted became the actual topics of debate at Vienna, little attention being paid there to any other propositions. I have described the preliminaries of the method of reaching the votes actually cast at Vienna in this detail as a matter of general interest; it will at once be seen that the method was well calculated to bring out opinions, and 31 out of 47 votes in the international commission was in a measure successful; no attempt was made, however, to hold a meeting of the international commission in advance of the congress to aid the reporter general in framing the rules and recommendations for discussion, and thus no opportunity for any preliminary agreement was provided.

The section of the Vienna congress which occupied itself with the discussion of the rules and recommendations thus enunciated, held its sessions every afternoon of the congress week in the lecture hall of the university botanical garden, under the able presidency of Professor Flahault of Montpellier, assisted by Professor Mez of Halle and Mr. Rendle of the British Museum of Natural History as vice-presidents; Dr. Briquet acted as the mentor of the meetings, doing much of the translation required and recapitulating the discussions in advance of the vote; there were three secretaries representing the French, English and German languages; the official language was French. The conditions prescribed for the voting on motions and propositions enabled a delegate to vote on behalf of a number of societies or institutions, if he was properly accredited by them to the congress; the number of delegates present was about 75, casting nearly 200 votes; of these

votes more than a majority came from Germany, Austria, Switzerland and Belgium; only two English delegates attended and the Royal Gardens at Kew were not represented in the voting; twelve delegates were present from the United States, casting about 30 votes. The actual voting was by means of printed ballots, except in the case of propositions which developed no debate, which were adopted *viva voce*.

Dr. Otto Kuntze, whose writings on the subject of botanical nomenclature have been the most voluminous, was not a delegate, nor were his views represented, inasmuch as he regards the appointment of the international commission at Paris as irregular, the preponderating vote of the central European countries as unfair, and the whole congress as incompetent to reach an international result. He appeared before one of the meetings and read a protest, distributing at the same time a printed document in support of his contentions. No opportunity for work by committees was permitted by the controlling vote, one subject only being permitted to go to conference, and on this one unanimity was reached; attempts were made to reopen several propositions supported by a large minority, in the hope that mutual concessions would lead to further unanimity, but the majority refused to permit this course to be taken; no attempt whatever was made to approach zoological usage.

The details of the rules and recommendations approved by the congress must await the publication of the official reports; meanwhile, the following general results may be mentioned:

1. Consideration of the nomenclature of the cellular cryptogams (Thallophytes and Bryophytes) was referred to a commission to report to the next international congress, to be held in Brussels in 1910.

2. The nomenclature of fossil plants was referred to another commission to report at the same time.

3. The congress was nearly unanimously in favor of establishing the date of departure for the names of both genera and species with

the publication of Linnæus' 'Species Plantarum,' 1753.

4. Uniform terminations for orders, families, tribes and other ranks, were unanimously agreed upon.

5. The stability of the specific name, when the species is transferred from one genus to another, was essentially unanimously approved, only two votes being cast against it, but when the rank is changed the preservation of the name was not made necessary; the only exception to this general rule was made in the case of double names, such as *Linaria linaria*, the vote being 116 to 72.

6. The congress approved a method of determining the generic name when an old genus is divided, essentially as it was laid down at the Paris congress of 1867, no advance being made on this line, and no provision being made for the establishment of generic types, although the vote on this question was 106 to 74.

7. Although having adopted unanimously as a leading article, a principle to the effect that the rules of nomenclature must not be arbitrary, the congress by a large majority voted to approve the exception of more than 400 generic names from the operation of all nomenclatorial rules, a list of such names submitted by Herr Harms of Berlin being adopted; the congress thus went on record as not regarding priority as a very important general principle. It was also maintained that other names may be added to this list in the future.

8. The congress approved, by a vote of 105 to 88, the requirement that after January 1, 1908, in order to constitute valid publication, a new name must be accompanied by a diagnosis in Latin, this not applying, however, to works already in course of publication.

9. The congress voted against the principle of the rejection of all homonyms better known to zoologists as the principle of 'once a synonym always a synonym,' thus failing to recognize this as an important aid in securing the stability of names.

10. The metric measurements were strongly recommended by a unanimous vote.

N. L. BRITTON.